

REMARKS

This is intended as a full and complete response to the Office Action dated March 26, 2004, having a shortened statutory period for response set to expire on June 26, 2004. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1, 3, 5-8, and 10-13, and 15-20 remain pending in the application and are shown above. Claims 2, 4, 9, and 14 have been canceled by Applicants. Claims 1, 3, 5-8, and 10-13, and 15-20 stand rejected. Reconsideration of the rejected claims is requested for reasons presented below.

Claims 1-6 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Rose, et al.* (U.S. Patent No. 6,068,884). Applicants have amended claim 1 to include the limitations of claim 4 and have canceled claims 2 and 4. Applicants have amended claim 3 to depend on claim 1. Applicants submit that the changes made herein do not introduce new matter.

Regarding the limitations of claim 4, which are now in claim 1, the Examiner states that *Rose, et al.* discloses wherein the two or more organosiloxanes (lines 64-65, column 4) are selected from the group consisting of octamethylcyclotetrasiloxane (lines 18-19, column 6). Applicants note that amended claim 1 requires reacting at least two organosiloxanes selected from the group consisting of 1,3,5,7-tetramethylcyclotetrasiloxane, octamethylcyclotetrasiloxane, 1,3,5,7,9-pentamethylcyclopentasiloxane, and 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene. While *Rose, et al.* generally discloses reacting cyclic organosilicon precursors such as octamethylcyclotetrasiloxane (lines 18-19, column 6), *Rose, et al.* does not include tetramethylcyclotetrasiloxane, 1,3,5,7,9-pentamethylcyclopentasiloxane, or 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene in its list of examples of suitable cyclic organosilicons (lines 17-25, column 6). Thus, there is no teaching or suggestion in *Rose, et al.* of a method for depositing a low dielectric constant film on a substrate, comprising reacting two or more organosiloxanes, wherein at least one of the organosiloxanes is a cyclic organosiloxane comprising C, H, and O, and wherein the two or more organosiloxanes are selected from the group consisting of 1,3,5,7-

tetramethylcyclotetrasiloxane, octamethylcyclotetrasiloxane, 1,3,5,7,9-pentamethylcyclopentasiloxane, and 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene, while applying RF power, wherein the low dielectric constant film comprises silicon-carbon bonds and a dielectric constant of about 3 or less, as recited in amended claim 1. Applicants respectfully request withdrawal of the rejection of claim 1 and of claims 3 and 5-6, which depend thereon.

Claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Rose, et al.*, as applied to claim 1 above, in view of *Grill, et al.* (U.S. Patent No. 6,147,009). As discussed above with respect to claim 1, *Rose, et al.* does not teach or suggest reacting at least two organosiloxanes selected from the group consisting of 1,3,5,7-tetramethylcyclotetrasiloxane, octamethylcyclotetrasiloxane, 1,3,5,7,9-pentamethylcyclopentasiloxane, and 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene. Applicants further submit that *Grill, et al.*, alone, or in combination with *Rose, et al.* does not teach or suggest reacting at least two organosiloxanes selected from the group consisting of 1,3,5,7-tetramethylcyclotetrasiloxane, octamethylcyclotetrasiloxane, 1,3,5,7,9-pentamethylcyclopentasiloxane, and 1,3,5,7-tetrasilano-2,6-dioxy-4,8-dimethylene. As *Rose, et al.* in view of *Grill, et al.* does not provide all of the limitations of claim 1, *Rose, et al.* in view of *Grill, et al.* does not provide all of the limitations of claim 7, which depends from claim 1. Applicants respectfully request withdrawal of the rejection of claim 7.

Claim 8, 11, 12, and 14 are rejected under 35 U.S.C. § 102(e) as being anticipated by *Rose, et al.* Claims 9-10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Rose, et al.* Applicants have amended claim 8 to include the limitations of claim 9 and have canceled claims 9 and 14. Applicants have amended claim 10 to depend on claim 8 as claim 9 has been canceled. Applicants submit that the changes made herein do not introduce new matter.

As amended, claim 8 recites a method that comprises reacting two or more organosilanes, wherein the two or more organosilanes comprise the cyclic organosilane 1,3,5-trisilano-2,4,6-trimethylene. The Examiner acknowledges that *Rose, et al.* does not disclose the cyclic organosilane 1,3,5-trisilano-2,4,6-trimethylene. The Examiner asserts that it would have been obvious to a person of ordinary skill in the art to recognize that the cyclic organosilane disclosed in *Rose, et al.* may also include 1,3,5-

trisilano-2,4,6-trimethylene because it is a cyclic organosilane and *Rose, et al.* discloses that any suitable precursors such as cyclic organosilicons, cyclic organosilazanes, and cyclic organosiloxanes can be used. Applicants submit that the Examiner's assertion that the cyclic organosilane of *Rose, et al.* "may" include 1,3,5-trisilano-2,4,6-trimethylene does not provide evidence that *Rose, et al.* teaches or suggests a method comprising reacting two or more organosilanes, wherein at least one of the organosilanes is the cyclic organosilane 1,3,5-trisilano-2,4,6-trimethylene. Furthermore, Applicants submit that there is no suggestion in *Rose, et al.* to use 1,3,5-trisilano-2,4,6-trimethylene, which includes carbon in a ring, as there is no teaching or suggestion in *Rose, et al.* of cyclic organosilicon compounds that include carbon in a ring. The cyclic organosilicon compounds listed in *Rose, et al.* (lines 18-23, column 6) do not include carbon in a ring. The formula that *Rose, et al.* provides for cyclic organosilicon compounds $(R_n(\text{SiO})_m\text{X}_{(2m-n)})$, lines 13-23, column 5) does not include a ring comprising carbon.

Therefore, *Rose, et al.* does not teach, show, or suggest a method for depositing a low dielectric constant film on a substrate, comprising reacting two or more organosilanes, wherein at least one of the organosilanes is a cyclic organosilane, wherein the cyclic organosilane is 1,3,5-trisilano-2,4,6-trimethylene, while applying RF power, wherein the low dielectric constant film comprises silicon-carbon bonds and a dielectric constant of about 3 or less, as recited in claim 8. Applicants respectfully request withdrawal of the rejection of claim 8 and of claims 10-12, which depend thereon.

Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Rose, et al.* as applied to claim 8 above, and in view of *Grill, et al.* As discussed above with respect to claim 8, *Rose, et al.* does not teach or suggest reacting two or more organosilanes, wherein at least one of the organosilanes is the cyclic organosilane 1,3,5-trisilano-2,4,6-trimethylene. Applicants further submit that *Grill, et al.*, alone, or in combination with *Rose, et al.* does not teach or suggest reacting two or more organosilanes, wherein at least one of the organosilanes is the cyclic organosilane 1,3,5-trisilano-2,4,6-trimethylene. As *Rose, et al.* in view of *Grill, et al.* does not provide all of the limitations of claim 8, *Rose, et al.* in view of *Grill, et al.* does not provide all of

the limitations of claim 13, which depends from claim 8. Applicants respectfully request withdrawal of the rejection of claim 13.

Claims 15-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Rose, et al.* Applicants respectfully traverse the rejection.

Claim 15 recites a method comprising reacting two or more organosiloxanes, wherein a first organosiloxane of the two or more organosiloxanes is cyclic and comprises C, H, and O and a ring comprising carbon and oxygen. The Examiner states that *Rose, et al.* discloses a method comprising reacting two or more organosiloxanes wherein a first organosiloxane of the two or more organosiloxanes is a cyclic organosiloxane and comprises C, H, and O and a ring comprising oxygen. The Examiner acknowledges that *Rose, et al.* fails to disclose that the cyclic organosiloxane comprises a ring comprising carbon. The Examiner asserts that it would have been obvious to a person of ordinary skill in the art to recognize that the cyclic organosiloxanes disclosed in *Rose, et al.* may also comprise carbon because *Rose, et al.* discloses that any suitable precursors such as cyclic organosiloxanes can be used. Applicants submit that there is no teaching or suggestion in *Rose, et al.* of cyclic organosiloxanes that include carbon in a ring. The cyclic organosiloxanes listed in *Rose, et al.* (lines 18-23, column 6) do not include carbon in a ring. The formula that *Rose, et al.* provides for cyclic organosiloxanes ($R_n(SiO)_mX_{(2m-n)}$, lines 13-23, column 5) does not include a ring comprising carbon and oxygen.

Thus, *Rose, et al.* does not teach, show, or suggest a method for depositing a low dielectric constant film on a substrate, comprising reacting two or more organosiloxanes, wherein a first organosiloxane of the two or more organosiloxanes is cyclic and comprises C, H, and O and a ring comprising carbon and oxygen, while applying RF power, wherein the low dielectric constant film comprises silicon-carbon bonds and a dielectric constant of about 3 or less, as recited in claim 15. Applicants respectfully request withdrawal of the rejection of claim 15 and of claims 16-19, which depend thereon.

Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Rose, et al.* as applied to claim 8 above, and in view of *Grill, et al.* Applicants respectfully traverse the rejection. *Grill, et al.* describes a precursor that can be selected from

molecules having ring structures. The compounds with ring structures that *Grill, et al.* discloses have silicon and oxygen in ring structures but not carbon (lines 16-20, column 3). As discussed above, *Rose, et al.* does not teach or suggest a cyclic organosiloxane comprising a ring comprising carbon and oxygen. Thus, *Rose, et al.* in view of *Grill, et al.* does not provide all of the limitations of claim 15, upon which claim 20 depends. Applicants respectfully request withdrawal of the rejection of claim 20.

Claims 1, 3, 5-8, and 10-13, and 15-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 3 of U.S. Patent No. 6,537,929. Applicants are submitting a terminal disclaimer in a separate paper. Applicants respectfully request withdrawal of the rejection of claims 1, 3, 5-8, and 10-13, and 15-20.

Claims 1, 5-6, 8, 10-12, and 15-19 are rejected under 35 U.S.C. § 102(e) as being anticipated by *Cheung, et al.* (U.S. Patent No. 6,537,929). The Examiner states that *Cheung, et al.* is prior art as it has an earlier effective U.S. filing date than the instant application. Applicants submit that the Examiner has not provided evidence that *Cheung, et al.* has an earlier effective filing date for the subject matter of the pending claims. Applicants note that the instant application claims priority to all of the priority applications of *Cheung, et al.* Applicants submit that the instant application has the same priority date as *Cheung, et al.* for the claimed subject matter except with respect to the pending claims that include octamethylcyclotetrasiloxane (claims 1, 3, and 17), which is not disclosed in *Cheung, et al.* Thus, Applicants submit that *Cheung, et al.* is not prior art with respect to claims 1, 5-6, 8, 10-12, and 15-19 and that the disclosure of octamethylcyclotetrasiloxane in claims 1, 3, and 17 is not anticipated by *Cheung, et al.* Applicants respectfully request withdrawal of the rejection of claims 1, 5-6, 8, 10-12, and 15-19.


In conclusion, the references cited by the Examiner, alone or in combination, do not teach, show, or suggest the invention as claimed.

The secondary references made of record are noted. However, it is believed that the secondary references are no more pertinent to the Applicant's disclosure than the primary references cited in the office action. Therefore, Applicant believes that a

detailed discussion of the secondary references is not necessary for a full and complete response to this office action.

Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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